

AkkaProf: a Profiler for Akka Actors in Parallel and Distributed Applications

Nowadays, numerous programming languages and frameworks offer concurrency based on the actor model. Among the actor libraries for the Java Virtual Machine, Akka is the most used one, as it is employed in various parallel and distributed applications and frameworks. Unfortunately, despite the spread of actors libraries, Akka in particular, existing profiling tools are little effective in identifying performance drawbacks in applications using actors. In this tool paper, we aim at filling this gap by presenting AkkaProf, a profiling tool for Akka actors. AkkaProf provides detailed metrics on actor utilization and on the communication between them, two fundamental aspects of actor-based applications that are overlooked by other profilers. AkkaProf aids performance analysis in several applications and frameworks in both parallel and distributed environments. To the best of our knowledge, AkkaProf is the first profiler centered on Akka actors collecting fine-grained metrics on actor utilization and communication.

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